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(54) **Toy vehicle**

(57) A toy vehicle having four ground engaging wheels 3, 4 and driven by a spring motor, in which a lever 9 is pivotally mounted and rotated by a cam 7 driven by the motor, the free end 11 of the lever engaging the ground near the front of the vehicle to "rear" the front, and a slew wheel 16 near the rear of the vehicle then contacting the ground, to slew the vehicle onto another course.

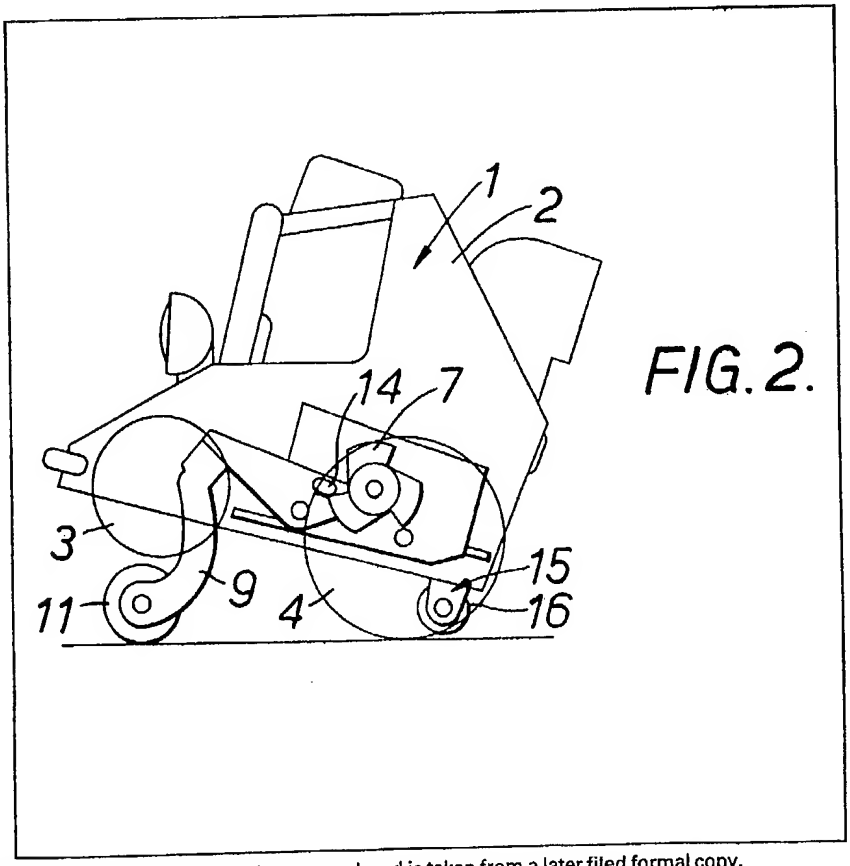
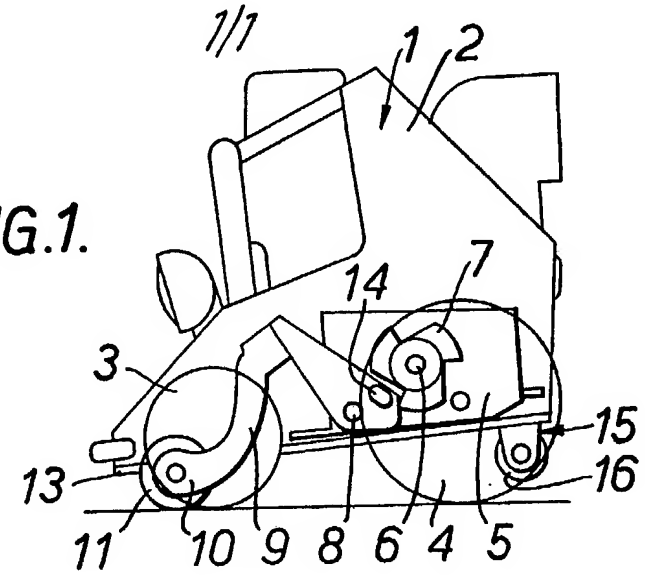


FIG. 2.

GB 2 124 094 A

The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

FIG.1.



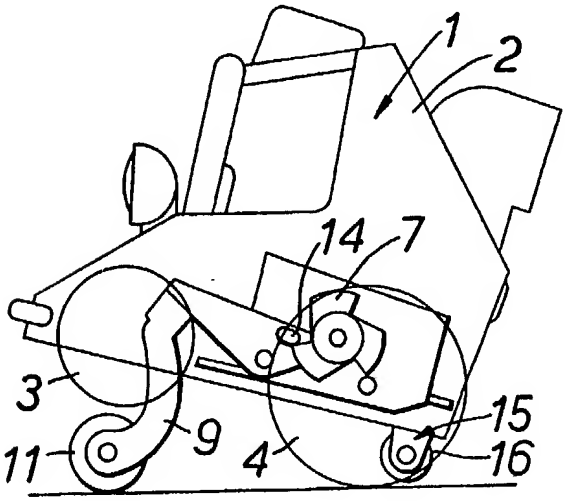
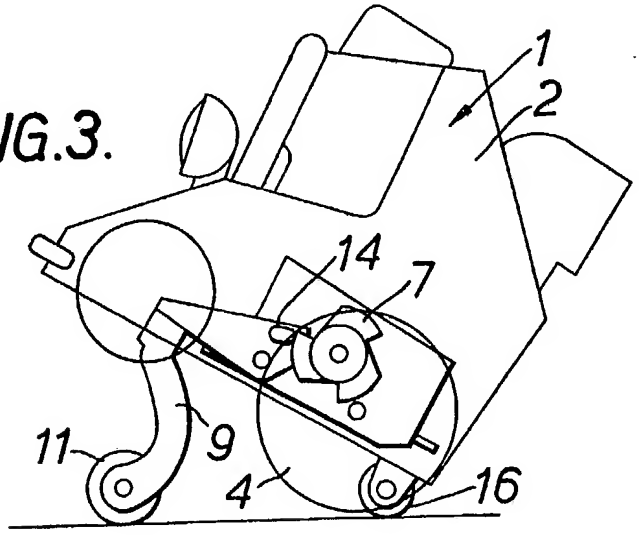


FIG.2.

FIG.3.



SPECIFICATION

Toy vehicle

Introduction

This invention relates to a toy vehicle of the type powered by a motor and having ground engaging wheels at least one of which is driven by the motor.

Prior art

Toy vehicles, particularly toy cars, are well known and may be either electrically or mechanically driven and with the latter construction the coil spring is wound either by use of a key or by drawing the vehicle backwardly across the ground to wind the spring and provide the motive power.

Recently the power weight ratio of internal combustion engines has been significantly improved with the consequence that with a life size motor cycle a daring rider may power the motor cycle in such a way that the front wheel is raised high above the ground while the motor cycle is moving forwardly at a fast speed. The visual effect of this is quite significant.

Object of the invention

It is the main object of this invention to provide a toy vehicle, particularly a toy car, in which the visual effect of the front of the car being raised above the ground during its forward motion in the style of the daring riding of a motor cycle as referred to above is achieved. A subsidiary object of the invention is to provide a vehicle as aforesaid in which the course of the vehicle is changed after each "rearing" (in the sense of a rearing horse) of the vehicle.

Statements of invention

According to the present invention there is provided a toy vehicle of the type referred to, in which connected to an output shaft of the motor is a mechanism in operative connection with a pivoted arm the free end of which is sited towards the front of the vehicle, a slew member sited towards the rear of the vehicle and normally clear of the ground, the arrangement being such that as the vehicle moves forwardly under power the mechanism pivots the arm the free end of which engages to raise the front of the vehicle from the ground causing the slew member to contact the ground and slew the vehicle onto another course.

The invention also includes the vehicle having two rear wheels and the slew member being sited rearwardly thereof and to one side of the vehicle.

The said mechanism may be a cam having a plurality of similarly shaped profiles on its periphery whereby for each rotation of the cam the vehicle is slewed as each profile effects movement of the arm.

Both the free end of the arm and the slew member may be provided with ground engaging wheels.

Conveniently the vehicle has a spring powered motor, the spring being wound by drawing the vehicle backwards along the ground.

Drawings

Figure 1 is a diagrammatic side elevation of a vehicle constructed in accordance with the invention with the vehicle in its normal attitude;

Figure 2 is a view similar to Figure 1 but with the attitude of the vehicle altered; and

Figure 3 is a view similar to Figure 1 showing the attitude of the vehicle still further altered into the "rearing" position.

Detailed description

Referring to the drawings a toy vehicle in the form of a toy car 1 had a body 2 with two forward ground engaging wheels 3 and two rear ground engaging wheels 4. A conventional spring powered motor 5 is provided having an output shaft 6 carrying a mechanism in the form of a cam 7 which is rotated by the shaft 6. Pivoted at 8 is an arm 9, the free end 10 of which is provided with a ground engaging wheel 11. This arm 11 extends through an opening in the base 13 of the vehicle. Carried by arm 9 is a projection 14 which engages the periphery of the cam 7. Mounted rearwardly of the rear wheels 4 of the vehicle is a slew member 15 having a ground engaging wheel 16 which in the normal position of the vehicle as illustrated in Figure 1 would be out of contact with the ground.

The motor 5 is designed so that it may be wound by moving the vehicle backwardly along the ground. The vehicle is then released and travels forwardly under power by the motor. During this forward movement the shaft 6 is rotated whereby cam 7 is similarly rotated and one of the shaped profiles of cam 7 contacts projection 14 on arm 9 (cam 7 rotates clockwise as seen in the Figures) and causes the arm 9 to pivot about its pivot 8.

An intermediate stage in the pivotal movement of arm 9 about pivot 8 is shown in Figure 2 in which the front wheels 3 of the vehicle have been raised above the ground, thus giving the impression that the vehicle is "rearing". With continued rotation of cam 7 the arm 9 will continue to pivot about its pivot 8 and the condition illustrated in Figure 3 will be reached in which the slew member in the form of wheel 16 will engage the ground thus fractionally tilting the vehicle so that one of the rear wheels is raised above the ground and thus slewing the vehicle onto a new course. As soon as that particular profile of the cam has passed out of engagement with the projection 14 the arm 9 will return again very rapidly to the position illustrated in Figure 1 thus raising the slew wheel 16 away from the ground so that all four ground engaging main wheels of the vehicle are in contact with the ground once again.

As soon as the next profile of the cam 7 contacts projection 14 the process of "rearing" and slewing the vehicle will be repeated.

The construction of the vehicle in accordance with the invention may be modified from that described above, for example the vehicle may only possess three main ground engaging wheels and these may be distributed one at the front of the vehicle and two at the rear or two at the front of the vehicle and one at the rear. The invention is applicable to such vehicles. If the invention is applied to a vehicle having only one main rear wheel then two such slew members 16 will be provided one on each side of the

vehicle. The direction of slew of the vehicle in such a case would be random. Also the cam member may be replaced by a similar mechanism so long as the raising and lowering of the front of the vehicle is achieved.

CLAIMS

1. A toy vehicle of the type referred to, in which connected to an output shaft of the motor is a mechanism in operative connection with a pivoted arm the free end of which is sited towards the front of the vehicle, a slew member sited towards the rear of the vehicle and normally clear of the ground, the arrangement being such that as the vehicle moves forwardly under power the mechanism pivots the arm the free end of which engages the ground to raise the front of the vehicle from the ground causing the slew member to contact the ground and slew the vehicle onto another course.

2. A toy vehicle as claimed in claim 1 provided with two rear ground engaging wheels and the slew member being rearwardly thereof and located to one side of the vehicle.

3. A toy vehicle as claimed in claim 1 or claim 2 in which the mechanism is a cam having a plurality of similarly shaped profiles on its periphery whereby for each rotation of the cam the vehicle is slewed as each profile effects movement of the arm.

4. A toy vehicle as claimed in any one of the preceding claims in which both the free end of the arm and the slew member are provided with ground engaging wheels.

5. A toy vehicle as claimed in any one of the preceding claims having a spring powered motor, the spring being wound by drawing the vehicle backwards along the ground.

6. A toy vehicle of the type referred to substantially as herein described with reference to the accompanying drawings.

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